

## **DEPARTMENT OF TRANSPORTATION**

### **Federal Aviation Administration**

#### **14 CFR Part 39**

**[Docket No. FAA-2005-23358; Directorate Identifier 2005-NM-206-AD; Amendment 39-14576; AD 2006-09-06]**

**RIN 2120-AA64**

**Airworthiness Directives; Boeing Model 747-100, 747-100B, 747-100B SUD, 747-200B, 747-300, 747-400, 747-400D, and 747SR Series Airplanes**

**AGENCY:** Federal Aviation Administration (FAA), Department of Transportation (DOT).

**ACTION:** Final rule.

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**SUMMARY:** The FAA is superseding an existing airworthiness directive (AD), which applies to certain Boeing Model 747-100, -200, and -300 series airplanes. That AD currently requires repetitive inspections to detect cracking of certain lower lobe fuselage frames, and repair if necessary. This new AD retains all the requirements of the existing AD, and adds airplanes to the applicability. This AD results from reports indicating that fatigue cracks were found in lower lobe frames on the left side of the fuselage. We are issuing this AD to detect and correct fatigue cracking of certain lower lobe fuselage frames, which could lead to fatigue cracks in the fuselage skin, and consequent rapid decompression of the airplane.

**DATES:** This AD becomes effective June 7, 2006.

The Director of the Federal Register approved the incorporation by reference of a certain publication listed in the AD as of June 7, 2006.

On May 5, 1999 (64 FR 15298, March 31, 1999), the Director of the Federal Register approved the incorporation by reference of Boeing Alert Service Bulletin 747-53A2408, dated April 25, 1996.

**ADDRESSES:** You may examine the AD docket on the Internet at <http://dms.dot.gov> or in person at the Docket Management Facility, U.S. Department of Transportation, 400 Seventh Street, SW., Nassif Building, room PL-401, Washington, DC.

Contact Boeing Commercial Airplanes, P.O. Box 3707, Seattle, WA 98124-2207, for service information identified in this AD.

**FOR FURTHER INFORMATION CONTACT:** Ivan Li, Aerospace Engineer, Airframe Branch, ANM-120S, FAA, Seattle Aircraft Certification Office, 1601 Lind Avenue, SW., Renton, WA 98055-4056; telephone (425) 917-6437; fax (425) 917-6590.

## **SUPPLEMENTARY INFORMATION:**

### **Examining the Docket**

You may examine the airworthiness directive (AD) docket on the Internet at <http://dms.dot.gov> or in person at the Docket Management Facility office between 9 a.m. and 5 p.m., Monday through Friday, except Federal holidays. The Docket Management Facility office (telephone (800) 647-5227) is located on the plaza level of the Nassif Building at the street address stated in the ADDRESSES section.

### **Discussion**

The FAA issued a notice of proposed rulemaking (NPRM) to amend 14 CFR part 39 to include an AD that supersedes AD 99-07-12, amendment 39-11097 (64 FR 15298, March 31, 1999). The existing AD applies to certain Boeing Model 747-100, -200, and -300 series airplanes. That NPRM was published in the Federal Register on December 20, 2005 (70 FR 75426). That NPRM proposed to retain all the requirements of AD 99-07-12, and add airplanes to the applicability.

### **Comments**

We provided the public the opportunity to participate in the development of this AD. We have considered the comments that have been received on the NPRM.

### **Request To Include Structural Repair Manual as Optional Terminating Action for Group 2 Airplanes**

Boeing requests that we revise paragraph (h)(1)(ii) of the NPRM to include the following sentence: "The Boeing 747-400 Structural Repair Manual, Subject 53-60-07, Repair 1 or 2 is one approved method." Boeing states that these repairs are applicable to Group 2 airplanes, and are equivalent to the repairs in the Boeing 747 Structural Repair Manual (SRM), Subject 53-10-04, Figure 67 or 90. Doing the actions in one of those figures is one approved method of repair as specified in paragraph (h)(1)(i) of the NPRM for Group 1 airplanes.

We agree. Repair 1 or 2 of Subject 53-60-07 of the Boeing 747-400 SRM constitutes equivalent repairs to those called out in paragraph (h)(1)(ii) of the AD. We have revised paragraph (h)(1)(ii) to refer to Boeing 747-400 SRM, Subject 53-60-07, Repair 1 or 2.

### **Request To Revise Paragraph (i) of the NPRM to Include Terminating Action for Group 2 Airplanes**

Boeing requests that we revise paragraph (i) of the NPRM to include the action in NPRM Directorate Identifier 2005-NM-008-AD, Docket No. FAA-2005-22526 (70 FR 56860, September 29, 2005), as a terminating action for Group 2 airplanes. Boeing points out that this action is equivalent to the terminating action that AD 2005-20-30, amendment 39-14327 (70 FR 59252, October 12, 2005), provides for Group 1 airplanes in the same paragraph. (Note: AD 99-07-12, which is superseded by this new AD, refers to AD 93-08-12, amendment 39-8559 (58 FR 27927, May 12, 1993). We superseded AD 93-08-12, with AD 2002-10-10, amendment 39-12756 (67 FR 36081, May 23, 2002), which we subsequently superseded with AD 2005-20-30—the reference that Boeing requests).

We agree. We have revised paragraph (i) of the final rule to refer to AD 2006-05-02, amendment 39-14499 (71 FR 10605, March 2, 2006), as an optional terminating action for Group 2 airplanes. AD 2006-05-02 is the final rule for NPRM Directorate Identifier 2005-NM-008-AD, Docket No. FAA-2005-22526.

## **Conclusion**

We have carefully reviewed the available data, including the comments that have been received, and determined that air safety and the public interest require adopting the AD with the changes described previously. We have determined that these changes will neither increase the economic burden on any operator nor increase the scope of the AD.

## **Costs of Compliance**

There are about 681 airplanes of the affected design in the worldwide fleet. This AD affects about 99 airplanes of U.S. registry.

The actions that are required by AD 99-07-12 and retained in this AD take about 2 work hours per airplane, at an average labor rate of \$65 per work hour. Based on these figures, the estimated cost of both the retained and new actions for U.S. operators is \$12,870, or \$130 per airplane, per inspection cycle.

## **Authority for This Rulemaking**

Title 49 of the United States Code specifies the FAA's authority to issue rules on aviation safety. Subtitle I, section 106, describes the authority of the FAA Administrator. Subtitle VII, Aviation Programs, describes in more detail the scope of the Agency's authority.

We are issuing this rulemaking under the authority described in subtitle VII, part A, subpart III, section 44701, "General requirements." Under that section, Congress charges the FAA with promoting safe flight of civil aircraft in air commerce by prescribing regulations for practices, methods, and procedures the Administrator finds necessary for safety in air commerce. This regulation is within the scope of that authority because it addresses an unsafe condition that is likely to exist or develop on products identified in this rulemaking action.

## **Regulatory Findings**

We have determined that this AD will not have federalism implications under Executive Order 13132. This AD will not have a substantial direct effect on the States, on the relationship between the national government and the States, or on the distribution of power and responsibilities among the various levels of government.

For the reasons discussed above, I certify that this AD:

- (1) Is not a "significant regulatory action" under Executive Order 12866;
- (2) Is not a "significant rule" under DOT Regulatory Policies and Procedures (44 FR 11034, February 26, 1979); and
- (3) Will not have a significant economic impact, positive or negative, on a substantial number of small entities under the criteria of the Regulatory Flexibility Act.

We prepared a regulatory evaluation of the estimated costs to comply with this AD and placed it in the AD docket. See the ADDRESSES section for a location to examine the regulatory evaluation.

## **List of Subjects in 14 CFR Part 39**

Air transportation, Aircraft, Aviation safety, Incorporation by reference, Safety.

## **Adoption of the Amendment**

Accordingly, under the authority delegated to me by the Administrator, the FAA amends 14 CFR part 39 as follows:

### **PART 39—AIRWORTHINESS DIRECTIVES**

1. The authority citation for part 39 continues to read as follows:

Authority: 49 U.S.C. 106(g), 40113, 44701.

#### **§ 39.13 [Amended]**

2. The Federal Aviation Administration (FAA) amends § 39.13 by removing amendment 39-11097 (64 FR 15298, March 31, 1999) and by adding the following new airworthiness directive (AD):

# AIRWORTHINESS DIRECTIVE



Aircraft Certification Service  
Washington, DC

U.S. Department  
of Transportation  
**Federal Aviation  
Administration**

[www.faa.gov/aircraft/safety/alerts/](http://www.faa.gov/aircraft/safety/alerts/)

The following Airworthiness Directive issued by the Federal Aviation Administration in accordance with the provisions of Title 14 of the Code of Federal Regulations (14 CFR) part 39, applies to an aircraft model of which our records indicate you may be the registered owner. Airworthiness Directives affect aviation safety and are regulations which require immediate attention. You are cautioned that no person may operate an aircraft to which an Airworthiness Directive applies, except in accordance with the requirements of the Airworthiness Directive (reference 14 CFR part 39, subpart 39.3).

**2006-09-06 Boeing:** Amendment 39-14576. Docket No. FAA-2005-23358; Directorate Identifier 2005-NM-206-AD.

## Effective Date

- (a) This AD becomes effective June 7, 2006.

## Affected ADs

- (b) This AD supersedes AD 99-07-12.

## Applicability

- (c) This AD applies to Boeing Model 747-100, 747-100B, 747-100B SUD, 747-200B, 747-300, 747-400, 747-400D, and 747SR series airplanes, certificated in any category, as identified in Boeing Alert Service Bulletin 747-53A2408, Revision 1, dated April 4, 2002.

## Unsafe Condition

- (d) This AD results from reports indicating that fatigue cracks were found in lower lobe frames on the left side of the fuselage. We are issuing this AD to detect and correct fatigue cracking of certain lower lobe fuselage frames, which could lead to fatigue cracks in the fuselage skin, and consequent rapid decompression of the airplane.

## Compliance

- (e) You are responsible for having the actions required by this AD performed within the compliance times specified, unless the actions have already been done.

## Restatement of the Requirements of AD 99-07-12, With Additional Information for Group 2 Airplanes

## Initial Inspections

- (f) For airplanes on which the initial detailed internal inspection of the Section 46 lower lobe frames required by paragraph (f)(2) or (i)(2) of AD 2005-20-30, amendment 39-14327, has not been accomplished: Perform a detailed visual inspection to detect cracking of the lower lobe fuselage frames from Body Station 1820 to Body Station 2100, in accordance with the Accomplishment

Instructions of Boeing Alert Service Bulletin 747-53A2408, dated April 25, 1996; or Boeing Alert Service Bulletin 747-53A2408, Revision 1, dated April 4, 2002; as applicable; at the later of the applicable times specified in paragraph (f)(1), (f)(2), or (f)(3) of this AD.

(1) For all airplanes: Prior to the accumulation of 15,000 total flight cycles; or

(2) For Group 1 airplanes identified in Revision 1 of the service bulletin: Within 1,500 flight cycles or 18 months after May 5, 1999 (the effective date of AD 99-07-12), whichever occurs first.

(3) For Group 2 airplanes identified in Revision 1 of the service bulletin: Within 1,500 flight cycles or 18 months after the effective date of this AD, whichever occurs first.

**Note 1:** Paragraphs (f)(2) and (i)(2) of AD 2005-20-30 require a detailed inspection to detect cracks in the Section 46 lower lobe frames, in accordance with Boeing Service Bulletin 747-53A2349, Revision 2, dated April 3, 2003. The initial inspection is required prior to the accumulation of 22,000 total flight cycles; or within 1,000 flight cycles after June 11, 1993 (the effective date of AD 93-08-12, amendment 39-8559), or November 16, 2005 (the effective date of AD 2005-20-30), depending on previous inspections accomplished; whichever occurs later.

**Note 2:** For the purposes of this AD, a detailed inspection is: "An intensive examination of a specific item, installation, or assembly to detect damage, failure, or irregularity. Available lighting is normally supplemented with a direct source of good lighting at an intensity deemed appropriate. Inspection aids such as mirror, magnifying lenses, etc., may be necessary. Surface cleaning and elaborate procedures may be required."

### **Repetitive Inspections**

(g) If no cracking is detected during the inspection required by paragraph (f) of this AD, repeat the inspection thereafter at intervals not to exceed 3,000 flight cycles.

### **Corrective Actions**

(h) If any cracking is detected during any inspection required by paragraph (f) of this AD, prior to further flight, accomplish paragraphs (h)(1) and (h)(2) of this AD:

(1) Within 20 inches of the crack location on the frame, perform a detailed inspection of the adjacent structure to detect cracking in accordance with Boeing Service Bulletin 747-53A2349, Revision 2, dated April 3, 2003. If any cracking is detected during any detailed inspection done in accordance with paragraph (f) or (h)(1) of this AD, prior to further flight, repair in accordance with paragraph (h)(1)(i) or (h)(1)(ii) of this AD, as applicable.

(i) For Group 1 airplanes: Using a method approved in accordance with the procedures specified in paragraph (j) of this AD. The Boeing 747-400 Structural Repair Manual, Subject 53-10-04, Figure 67 or 90, is one approved method.

(ii) For Group 2 airplanes: Using a method approved in accordance with the procedures specified in paragraph (j) of this AD. The Boeing 747-400 Structural Repair Manual, Subject 53-60-07, Repair 1 or 2, is one approved method.

(2) Repeat the inspection required by paragraph (f) of this AD thereafter at intervals not to exceed 3,000 flight cycles.

### **Optional Terminating Inspection**

(i) Accomplishment of the initial detailed inspection of the Section 46 lower lobe frames required by paragraph (f)(2) or (i)(2) of AD 2005-20-30 constitutes terminating action for the requirements of this AD only for airplanes identified in Boeing Alert Service Bulletin 747-53A2408, Revision 1, dated April 4, 2002, as Group 1 airplanes. Accomplishment of the initial detailed

inspection of the Section 46 lower lobe frames required by paragraph (f) of AD 2006-05-02 constitutes terminating action for the requirements of this AD only for airplanes identified in Boeing Alert Service Bulletin 747-53A2408, Revision 1, dated April 4, 2002, as Group 2 airplanes.

### **Alternative Methods of Compliance (AMOCs)**

(j)(1) The Manager, Seattle Aircraft Certification Office (ACO), FAA, has the authority to approve AMOCs for this AD, if requested in accordance with the procedures found in 14 CFR 39.19.

(2) Before using any AMOC approved in accordance with § 39.19 on any airplane to which the AMOC applies, notify the appropriate principal inspector in the FAA Flight Standards Certificate Holding District Office.

(3) An AMOC that provides an acceptable level of safety may be used for any repair required by this AD, if it is approved by an Authorized Representative for the Boeing Commercial Airplanes Delegation Option Authorization Organization who has been authorized by the Manager, Seattle ACO, to make those findings. For a repair method to be approved, the repair must meet the certification basis of the airplane.

(4) AMOCs approved previously in accordance with AD 99-07-12, are approved as AMOCs for the corresponding provisions of this AD.

### **Material Incorporated by Reference**

(k) You must use Boeing Alert Service Bulletin 747-53A2408, dated April 25, 1996; or Boeing Alert Service Bulletin 747-53A2408, Revision 1, dated April 4, 2002; as applicable; to perform the actions that are required by this AD, unless the AD specifies otherwise.

(1) The Director of the Federal Register approved the incorporation by reference of Boeing Alert Service Bulletin 747-53A2408, Revision 1, dated April 4, 2002, in accordance with 5 U.S.C. 552(a) and 1 CFR part 51.

(2) On May 5, 1999 (64 FR 15298, March 31, 1999), the Director of the Federal Register approved the incorporation by reference of Boeing Alert Service Bulletin 747-53A2408, dated April 25, 1996.

(3) Contact Boeing Commercial Airplanes, P.O. Box 3707, Seattle, Washington 98124-2207, for a copy of this service information. You may review copies at the Docket Management Facility, U.S. Department of Transportation, 400 Seventh Street, SW., room PL-401, Nassif Building, Washington, DC; on the Internet at <http://dms.dot.gov>; or at the National Archives and Records Administration (NARA). For information on the availability of this material at the NARA, call (202) 741-6030, or go to [http://www.archives.gov/federal\\_register/code\\_of\\_federal\\_regulations/ibr\\_locations.html](http://www.archives.gov/federal_register/code_of_federal_regulations/ibr_locations.html).

Issued in Renton, Washington, on April 20, 2006.

Kalene C. Yanamura,

Acting Manager, Transport Airplane Directorate, Aircraft Certification Service.

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